



MUMPS LABORATORY TESTING GUIDANCE

Appropriate Clinical Specimens for Mumps Testing

Testing Method	Buccal or Oral Swab	Urine	Serum
RT-PCR ^{1,2}	Yes	Yes	
IgM or IgG Serology			Yes

¹RT-PCR is the preferred method for confirming an acute mumps case; a buccal swab is the preferred sample.

²Sequencing will be performed on PCR-positive specimens to determine viral genotype.

Only patients with symptoms consistent with mumps will be considered for RT-PCR or IgM testing.

Health care providers must contact their local public health department for consultation and testing approval.

Specimen Collection

Buccal or Throat (Oropharyngeal) Swab

- Collect as soon as mumps is suspected. Within 3 days of symptom onset is ideal.
- Massage the parotid gland (near the upper rear molars between the cheek and teeth) for 30 seconds, then vigorously swab the parotid area with a sterile synthetic swab (e.g., Dacron).
- Detailed buccal swabbing instructions are available at the [CDC mumps website](http://www.cdc.gov/mumps/lab/detection-mumps.html) <http://www.cdc.gov/mumps/lab/detection-mumps.html>.
- Place swab into 2-3 ml of acceptable *liquid* viral or universal transport medium, such as VTM, UTM, cell culture medium, or a sterile isotonic solution such as PBS with added protein.

Urine: Testing may be appropriate in cases with orchitis.

- Collect 10-20 ml urine in a sterile container. The first morning void is ideal.
- Process the urine: Centrifuge at 500-600 x g for 10 minutes. Resuspend the pellet in 2-3 ml of viral transport medium. If processing is not possible, store and ship the sample at 2° - 8°C within 24 hours.

Serum IgM or IgG testing

- Collect 7-10 ml of blood in a red top/serum separator tube.

- The optimal time for collecting an acute blood is at least 96 hours after onset of symptoms.
- **IgM testing:** False positive and non-specific reactions are known to occur. False negative reactions do not rule out mumps and may occur in vaccinated persons or if serum is collected less than 96 hours after onset.
- **IgG testing:** Paired sera collected 10-14 days apart may show a diagnostic rise in IgG in a person with mumps. A single serum sample is sufficient to test for IgG in case contacts to assess prior exposure to the virus or vaccine.

Specimen storage and shipping

- Store all specimens at 4°C and ship on cold pack within 24 to 72 hours.
- For longer storage, process serum and urine, and store and ship all specimens at -70°C or colder.

Questions about specimen collection, submittal, or shipping: Contact the VRDL Medical and Epidemiology Liaisons Unit at (510) 307-8585 or VRDL.submittal@cdph.ca.gov.

Specimen shipment to VRDL requires prior consultation with your local public health department. Jurisdictions without a local Public Health Laboratory may ship specimens directly to VRDL. To ship approved specimens:

Viral and Rickettsial Disease Laboratory
 850 Marina Bay Parkway, Richmond, CA 94804
 Tel (510) 307-8585; FAX (510) 307-8599

- Complete the [VRDL General Purpose Specimen Submittal Form](#) for **EACH SPECIMEN** ([VRDL Specimen Submittal Forms](#)):
 - Indicate if the specimen(s) is from a suspect case OR from a contact (for IgG testing only).
 - For a suspect case, include date of parotitis onset and whether person is linked to a confirmed case.
 - Include mumps vaccination dates, if known.
 - Include hard copy with specimens.
- **Notify CDPH by secure email** to VRDL.Submittal@cdph.ca.gov. Include a PDF of the VRDL submittal form for each specimen and the name and phone number of the investigator in your jurisdiction who can provide additional information, if needed.
- In outbreak settings, please email package tracking information to expedite processing.
- Ship approved specimens to:

CDPH VRDL

Attn: Specimen Receiving
850 Marina Bay Parkway
Richmond, CA 94804

Reporting

Report suspected, probable, and confirmed cases via CalREDIE or the [CDPH case report form](#) or contact the CDPH Immunization Branch at (510) 620-3737 and ask to be referred to the epidemiologist on-call.

Other resources

- [Mumps case investigation “quicksheet”](#)
<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/Immunization/Mumps-Quicksheet.pdf>
- [CDC Mumps specimen collection guidance](#)
<http://www.cdc.gov/mumps/lab/specimen-collect.html>

Viral and Rickettsial Disease Laboratory
850 Marina Bay Parkway, Richmond, CA 94804
Tel (510) 307-8585; FAX (510) 307-8599